

2. REQUIREMENTS

In accordance with the Phase I O&M Plan (DOE-ID 2004), interim removal, in-place detonation, or isolation of ordnance and explosives discovered during routine operations at the INL will be performed if they are determined by qualified explosive experts to pose an unacceptable near-term physical hazard. These interim removal, detonation, and isolation actions are intended to address only the imminent safety hazard posed by the presence of ordnance and explosives, not the cleanup requirements that can be deferred for later action in future OU 10-04 remediation phases.

Since the phased approach to remediation of OU 10-04 sites delays removal of ordnance and explosives from those sites identified in the Record of Decision (DOE-ID 2003), there is a potential for discovery of surface ordnance and explosives during routine operations (such as performing ecological monitoring, drilling new groundwater monitoring wells, and performing a site walk-down after a range fire) that could pose an unacceptable, imminent physical hazard to INL workers or the public before remediation of these areas is completed. Therefore, the Phase I O&M Plan (DOE-ID 2004) provides a mechanism whereby surface ordnance and explosives (which are determined by explosive experts to pose an imminent safety hazard before remediation of these areas can be completed) can be removed, detonated in place, or isolated such that the imminent risk is mitigated. The intent of removal, detonation, and isolation is to address only the near-term physical hazard and not contamination that can be safely deferred to the future remedial action phases. Thus, discovery of ordnance and explosives requiring evaluation for removal or isolation will not necessarily initiate efforts to detect, map, and remove potential ordnance and explosives near the ordnance and explosives identified for evaluation.

Ordnance and explosives determined to pose an imminent hazard will be removed, if safe to handle, and transported to the Mass Detonation Area for disposal by high-order detonation using additional explosives to initiate the detonation. If the explosive expert determines that the items cannot be safely transported, the UXO and explosives will be detonated in place. Alternatively, the ordnance and explosives will be isolated by establishing a signed and fenced or barricaded exclusion zone. Fencing may be considered for use in areas where live UXO is present, immediate or near-term removal cannot be performed, and where public and/or worker access to UXO could result in unintentional detonation.

3. FISCAL YEAR 2005 FIELD ACTIVITIES

During FY 2005, it had been reported to WAG 10 personnel that ordnance might potentially be in an area to the southwest of the Middle Butte. This area is located near the portion of the INL that is periodically used for grazing. The amount of INL land used for grazing varies from year to year, but approximately 60% of the INL is open to livestock grazing. No grazing is permitted within 0.5 mi of any primary facility area boundaries.

The U.S. Bureau of Land Management (BLM) grants and administers rights of way and grazing permits for INL lands. Thirty-four ranchers currently hold grazing permits on the INL with the BLM being responsible for managing and controlling grazing on the INL Site. In order to keep cattle and sheep away from facility areas or contaminated sites, grazing operators are provided with a map showing the areas in which grazing is allowed, and they are instructed to stay away from visible facility areas. Most of the cattle allotments are fenced; however, there are some areas where fences are not present. In years of abundant water (when the Big Lost River is flowing), both cattle and sheep are difficult to control. If cattle or sheep are found outside of the approved grazing areas, the U.S. Department of Energy notifies the BLM, and the BLM notifies the operators. Controlled hunting also is permitted on INL land, but it is restricted to 0.5 mi inside the boundary. The area of potential ordnance is near the southern boundary of the INL and accessible by dirt roads from the south (see Figure 2).

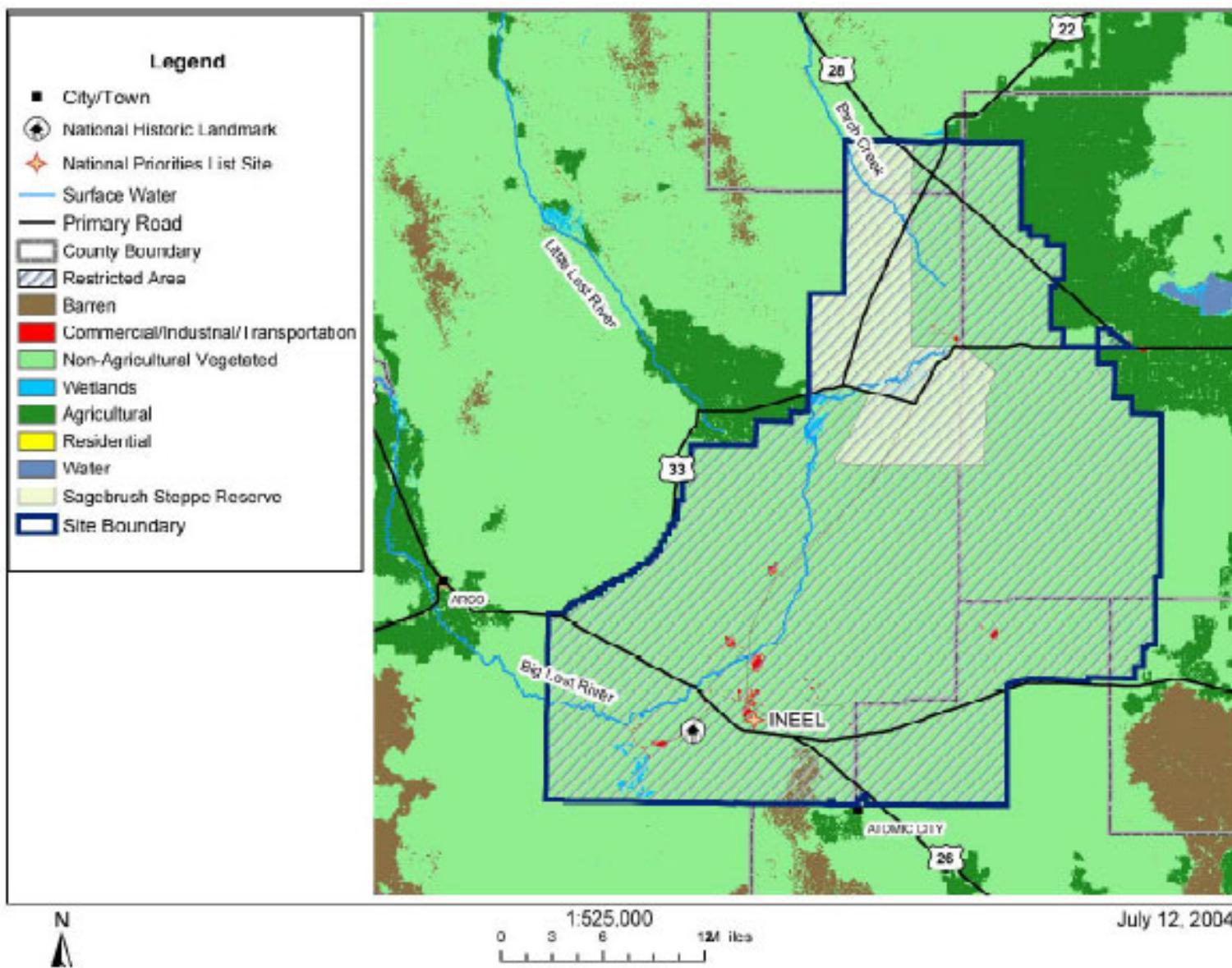


Figure 2. Site human and ecological land-use map.

A team was formed, including two explosive-ordnance disposal experts, to walk down the area and identify any ordnance that could pose an imminent risk to INL personnel or the public, given that the area lies near the southern boundary of the INL and within the established grazing area. A systematic approach was taken to walking down the area along the southern flank of the Middle Butte with personnel spaced approximately 10 m apart. The area appeared to have been used by a small contingent of armed forces personnel for training with remnants of a few foxholes present and spent rifle cartridges that appeared to have come from a .30-06, a rifle commonly used by the army. Eight spent incendiary-smoke bomblets (Type AN-M69) were found during the walk-down (see Figures 3a, 3b, 3c, and 3d).



Figure 3a. AN-M69 Incendiary Bomblet No. 1.



Figure 3b. AN-M69 Incendiary Bomblet No. 2.



Figure 3c. AN-M69 Incendiary Bomblet No. 3.



Figure 3d. AN-M69 Incendiary Bomblet No. 4.

The construction of the AN-M69 incendiary bomblet's body consists of a hexagonal case with a nose cup welded to the forward end with an overall length of 19.5 in. and a diameter of 2.87 in. (see Figure 4). The nose cup, fuze, and powder charges are sealed off from the rest of the case by an impact diaphragm and plug held in a cup-shaped sealing diaphragm. The incendiary oil filling (2.8 lb of gelled gasoline) is held in a cheesecloth sack situated between the forward sealing diaphragm and the tail cup. The total weight of the incendiary bomblet is 6.0 lb. The tail assembly consists of a tail cup, tail retainer, and disc. The tail cup is secured to the hexagonal case by beading, crimping, and heating. Four gauze streamers, each 54 in. long, are attached to the tail retainer by the tail disc to stabilize the bomblet and reduce the terminal velocity.

As shown in Figure 5, the bomblets were concentrated in an area bordered by an old dirt road on the southern flank of the Middle Butte. Figure 5 also shows the paths taken during the walk-down between the area where the bomblets were located and the Middle Butte to determine whether any other bomblets might have been dropped between the location and the butte. No other bomblets or signs of army activity were located outside the immediate vicinity where the bomblets were found.

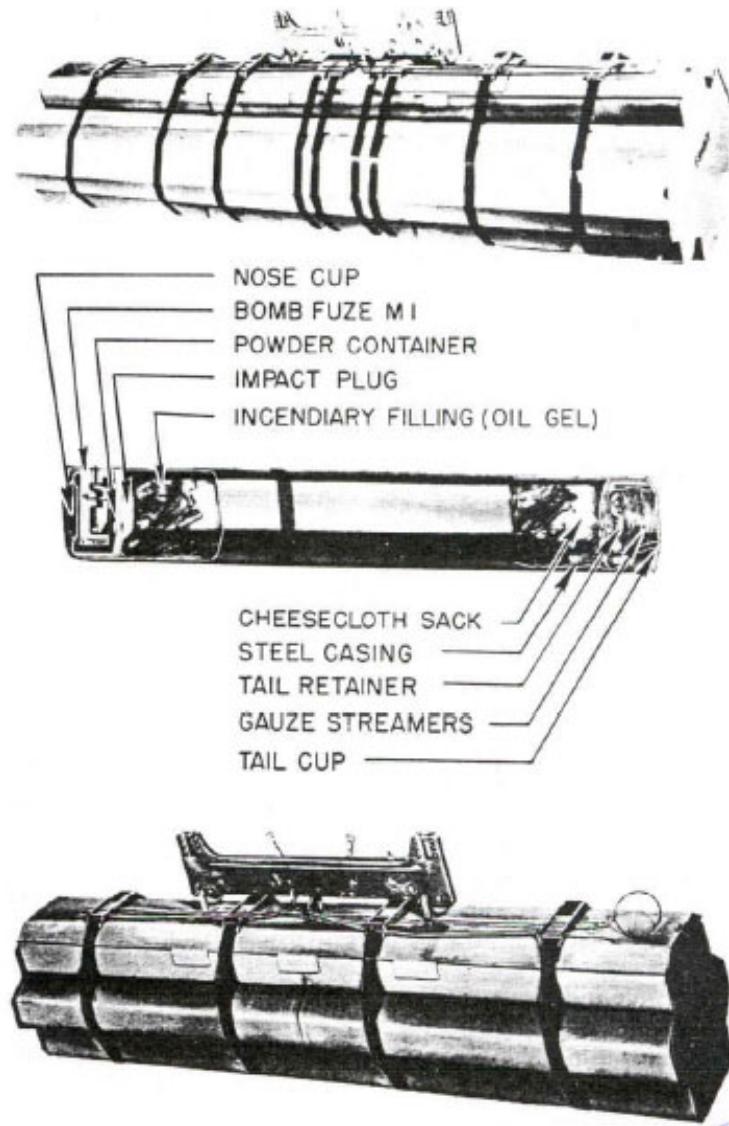


Figure 4. The 6-lb Incendiary Bomblet AN-M69 schematic.